

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



(43) International publication date

4 March 2003 (04.03.2003)

PCT

(10) International publication number

WO 2004/018202 A1

(51) International patent classification⁷: B32B 27/32

(21) International application number: PCT/EP2003/009156

(22) International filing date: 19 August 2003 (19.08.2003)

(25) Language of filing: German

(26) Language of publication: German

(30) Data relating to the priority:
102 38 516.5 21 August 2002 (21.08.2002) DE

(71) Applicant (for all designated States except US): TICONA GMBH [DE/DE]; Professor-Staudinger-Strasse, 65451 Kelsterbach (DE).

(72) Inventors; and

(75) Inventors/Applicants (US only): BEER, Ekkehard [DE/DE]; Adolfsecker Weg 15, 65307 Bad Schwalbach (DE). GOERLITZ, Wolfram [DE/DE]; Galileistrasse 12, 65193 Wiesbaden (DE). HOECKER, Bernd [DE/DE]; Kiedricher Strasse 5, 65345 Eltville-Rauenthal (DE).

(81) Designated states (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated states (regional): ARIPO Patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian Patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European Patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI Patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- With the International Search Report.
- Before expiry of the period provided for amending the claims, will be republished if such amendments are received.

For an explanation of the two-letter codes and the other abbreviations, reference is made to the explanations ("Guidance Notes on Codes and Abbreviations") at the beginning of each regular edition of the PCT Gazette.

As printed

(54) Title: MULTIPLY POLYOLEFIN SHEET, METHOD FOR MAKING SAME AND RELATED USE

(54) Bezeichnung: POLYOLEFIN-MEHRSCICHTFOLIE, VERFAHREN ZU IHRER HERSTELLUNG UND IHRE VERWENDUNG

(57) Abstract: The invention concerns a multiply polyolefin sheet consisting of at least three plies, namely a) an intermediate ply A as base layer, containing at least one semicrystalline polyolefin and at least 5,0 wt. % of an amorphous polyolefin, and b) two outer plies B and C, on either side of the intermediate ply, which are identical or different and consisting of a polyolefin (polyethylene, polypropylene) and/or of a mixture of polypropylene and an amorphous polyolefin. The inventive sheets combine excellent thermostability with low shrinking. The chemical composition of the intermediate ply A results in extremely low water absorption and in a very high barrier effect against water vapour. The invention also concerns a method for making said sheet and its use.

(57) Zusammenfassung: Die Erfindung betrifft eine Polyolefin-Mehrschichtfolie aus mindestens drei Schichten, enthaltend a) eine als Basisschicht fungierende Kernschicht A aus mindestens einem amorphen Polyolefin oder einer Mischung mindestens eines teilkristallinen Polyolefins und 5,0 oder mehr Gew.-% mindestens eines amorphen Polyolefins und b) zwei beidseitigen Deckschichten B und C, die gleich oder verschieden sind, aus einem Polyolefin (Polyethylen, Polypropylen) und/oder einer Mischung aus Polypropylen und einem amorphen Polyolefin. Die Folien gemäss der Erfindung besitzen eine sehr gute Thermoformbarkeit bei gleichzeitig geringem Schrumpf. Aufgrund des chemischen Aufbaus der Kernschicht A resultiert eine ausserordentlich geringe Wasseraufnahme und eine überragende Sperrwirkung gegen Wasserdampf. Die Erfindung betrifft ferner ein Verfahren zur Herstellung dieser Folie sowie ihre Verwendung.

WO 2004/018202 A1

Abstract**Multilayer polyolefin film, its use and process for its production**

- 5 The invention relates to a multilayer polyolefin film composed of at least three layers, comprising a) a core layer A functioning as base layer and composed of at least one amorphous polyolefin or of a mixture of at least one semicrystalline polyolefin and 5.0% by weight or more of at least one amorphous polyolefin and b) on the two sides, outer layers B and C, which
- 10 are identical or different, composed of a polyolefin (polyethylene, polypropylene) and/or a mixture composed of polypropylene and of an amorphous polyolefin. The films of the invention have very good thermoformability together with low shrinkage. The chemical structure of the core layer A gives exceptionally low water absorption and superior
- 15 barrier action with respect to water vapor. The invention further relates to the use of this film and to a process for its production.